CLAIMS

1.   A method of processing data defining a plurality of images of an object recorded at different positions and orientations and data defining the positions and orientations to generate data defining a three-dimensional computer model of the object, the method comprising:

defining a volume in three-dimensional space enclosing the object;

determining the two-dimensional projection of the volume in at least one of the images;

selecting pixels from at least one image in dependence upon the volume projection therein;

determining segmentation parameters in dependence upon at least one image property of the selected pixels, the segmentation parameters comprising parameters for distinguishing between subject object image data and other image data during segmentation processing;

processing the image data to segment image data relating to the object from other image data in at least some of the images using the generated segmentation parameters; and

generating data defining a three-dimensional computer model of the object using the results of the

segmentation processing and the data defining the positions and orientations at which the images were recorded.

5   2.   A method according to claim 1, wherein the pixels are selected from an image by determining the position of the outer perimeter of the volume projection in the image and selecting pixels in dependence upon the determined outer perimeter position.

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3.   A method according to claim 2, wherein pixels are selected from an image by selecting pixels from a band adjacent the outer perimeter of the volume projection.

15   4.   A method according to claim 1, wherein the processing operations are repeated at least once, and wherein, on the second and each subsequent time the operations are performed, the process of defining a volume in the three-dimensional space enclosing the

20   object comprises defining the volume to be the three-dimensional computer model of the object generated a previous time the operations were performed.

5.   A method according to claim 1, wherein, in the

25   processing to segment image data relating to the object

from other image data in an image, the segmentation

processing using the generated segmentation parameters

is performed only on image data within the projection of

the volume in the image, and the image data outside the

5   projection of the volume is classified as image data

which does not relate to the object.

6.   A method according to claim 1, wherein the

segmentation parameters are determined in dependence upon

10   the value of at least one colour component of each

selected pixel.

7.   A method according to claim 1, wherein:

each image to be processed shows the object together

15   with a calibration object and the data defining the

positions and orientations of the images defines the

positions and orientations of the images and the position

of the calibration object in the same three-dimensional

coordinate system; and

20   the volume enclosing the object is defined in the

three-dimensional coordinate system of the images and

calibration object in dependence upon the calibration

object.

25   8.   A method according to claim 1, further comprising

generating a signal carrying data defining the generated

three-dimensional computer model.

9.   A method according to claim 8, further comprising

5   making a recording of the signal either directly or

indirectly.

10.   A method of processing data defining a plurality of

images of an object recorded at different positions and

10   orientations   and   data   defining   the   positions   and

orientations to segment image data relating to the object

from   other   image   data   in   the   images,   the   method

comprising:

defining   a   volume   in   three-dimensional   space

15   enclosing the object;

determining the two-dimensional projection of the

volume in at least one of the images;

selecting   pixels   from   at   least   one   image   in

dependence upon the volume projection therein;

20   determining segmentation parameters in dependence

upon at least one image property of the selected pixels,

the   segmentation   parameters   comprising   parameters   for

distinguishing   between   subject   object   image   data   and

other image data during segmentation processing; and

25   segmenting image data relating to the object from

other image data in at least some of the images using the

generated segmentation parameters.

11.   A method according to claim 10, further comprising

generating a signal carrying data defining the silhouette

of the subject object in each of the at least some

images.

12.   A method according to claim 11, further comprising

making a recording of the signal either directly or

indirectly.

13.   An apparatus for processing data defining a

plurality of images of an object recorded at different

positions and orientations and data defining the

positions and orientations to generate data defining a

three-dimensional computer model of the object, the

apparatus comprising:

a volume definer operable to define a volume in

three-dimensional space enclosing the object;

a volume projector operable to determine a two-

dimensional projection of the volume in at least one of

the images;

a pixel selector operable to select pixels from at

least one image in dependence upon the volume projection

therein;

a segmentation parameter definer operable to determine segmentation parameters in dependence upon at least one image property of the selected pixels, the segmentation parameters comprising parameters for distinguishing between subject object image data and other image data during segmentation processing;

an image data segmenter operable to process the image data to segment image data relating to the object from other image data in at least some of the images using the generated segmentation parameters; and

a three-dimensional computer model data generator operable to generate data defining a three-dimensional computer model of the object using the results of the segmentation processing and the data defining the positions and orientations at which the images were recorded.

14. An apparatus according to claim 13, wherein said pixel selector is operable to select pixels from an image by determining the position of an outer perimeter of the volume projection in the image and selecting pixels in dependence upon the determined outer perimeter position.

15. An apparatus according to claim 14, wherein said

pixel selector is operable to select pixels from an image
by selecting pixels from a band adjacent the outer
perimeter of the volume projection.

5   16.   An apparatus according to claim 13, wherein the
apparatus is operable to repeat the processing operations
at least once, and wherein, on the second and each
subsequent time the operations are performed, said volume
definer is arranged to define the volume to be the three-
10 dimensional computer model of the object generated a
previous time the operations were performed.

17.   An apparatus according to claim 13, wherein said
image data segmenter is operable to perform segmentation
15 processing using the generated segmentation parameters
only on image data within the projection of the volume
in the image, and to classify the image data outside the
projection of the volume as image data which does not
relate to the object.

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18.   An apparatus according to claim 13, wherein said
segmentation parameter definer is operable to determine
the segmentation parameters in dependence upon the value
of at least one colour component of each selected pixel.

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19.   An apparatus according to claim 13, wherein:

each image to be processed shows the object together with a calibration object and the data defining the positions and orientations of the images defines the

5   positions and orientations of the images and the position of the calibration object in the same three-dimensional coordinate system; and

said volume definer is operable to define the volume enclosing the object in the three-dimensional coordinate

10   system of the images and calibration object in dependence upon the calibration object.

20.   An apparatus for processing data defining a plurality of images of an object recorded at different

15   positions and orientations and data defining the positions and orientations to segment image data relating to the object from other image data in the images, the apparatus comprising:

a volume definer operable to define a volume in

20   three-dimensional space enclosing the object;

a projection calculator operable to determine the two-dimensional projection of the volume in at least one of the images;

a pixel selector operable to select pixels from at

25   least one image in dependence upon the volume projection

therein;

a segmentation parameter definer operable to determine segmentation parameters in dependence upon at least one image property of the selected pixels, the segmentation parameters comprising parameters for distinguishing between subject object image data and other image data during segmentation processing; and

an image data segmenter operable to segment image data relating to the object from other image data in at least some of the images using the generated segmentation parameters.

21. An apparatus for processing data defining a plurality of images of an object recorded at different positions and orientations and data defining the positions and orientations to generate data defining a three-dimensional computer model of the object, the apparatus comprising:

means for defining a volume in three-dimensional space enclosing the object;

means for determining the two-dimensional projection of the volume in at least one of the images;

means for selecting pixels from at least one image in dependence upon the volume projection therein;

means for determining segmentation parameters in

dependence upon at least one image property of the selected pixels, the segmentation parameters comprising parameters for distinguishing between subject object image data and other image data during segmentation
5   processing;

means for processing the image data to segment image data relating to the object from other image data in at least some of the images using the generated segmentation parameters; and

10   means for generating data defining a three-dimensional computer model of the object using the results of the segmentation processing and the data defining the positions and orientations at which the images were recorded.

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22. An apparatus for processing data defining a plurality of images of an object recorded at different positions and orientations and data defining the positions and orientations to segment image data relating
20   to the object from other image data in the images, the apparatus comprising:

means for defining a volume in three-dimensional space enclosing the object;

means for determining the two-dimensional projection
25   of the volume in at least one of the images;

means for selecting pixels from at least one image in dependence upon the volume projection therein;

means for determining segmentation parameters in dependence upon at least one image property of the selected pixels, the segmentation parameters comprising parameters for distinguishing between subject object image data and other image data during segmentation processing; and

means for segmenting image data relating to the object from other image data in at least some of the images using the generated segmentation parameters.

23. A storage medium storing computer program instructions to program a programmable processing apparatus to become operable to perform a method as set out in any one of claims 1 to 7 and 10.

24. A signal carrying computer program instructions to program a programmable processing apparatus to become operable to perform a method as set out in any one of claims 1 to 7 and 10.